

METRIC CONVERSION TABLE

To convert from

to

Multiply by

AREA AND SECOND MOMENT OF AREA

| | | |
|-------------------------------|-------------------------------------|----------------|
| square foot (ft^2) | square meter (m^2) | 9.290 304 E-02 |
| square inch (in^2) | square meter (m^2) | 6.4516 E-04 |
| square inch (in^2) | square centimeter (cm^2) | 6.4516 E+00 |
| square yard (yd^2) | square meter (m^2) | 8.361 274 E-01 |

ENERGY (includes WORK)

| | | |
|--|-----------|----------------|
| kilowatt hour ($\text{kW} * \text{h}$) | joule (J) | 3.6 E+06 |
| quad (1015 BtuIT) | joule (J) | 1.055 056 E+18 |
| therm (U.S.) | joule (J) | 1.054 804 E+08 |
| ton of TNT (energy equivalent) | joule (J) | 4.184 E+09 |
| watt hour ($\text{W} * \text{h}$) | joule (J) | 3.6 E+03 |
| watt second ($\text{W} * \text{s}$) | joule (J) | 1.0 E+00 |

FORCE

| | | |
|--------------------------------|-----------------|----------------|
| dyne (dyn) | newton (N) | 1.0 E-05 |
| kilogram-force (kgf) | newton (N) | 9.806 65 E+00 |
| kilopond (kilogram-force) (kp) | newton (N) | 9.806 65 E+00 |
| kip (1 kip=1000 lbf) | newton (N) | 4.448 222 E+03 |
| kip (1 kip=1000 lbf) | kilonewton (kN) | 4.448 222 E+00 |
| pound-force (lbf) | newton (N) | 4.448 222 E+00 |

FORCE DIVIDED BY LENGTH

| | | |
|-------------------------------|------------------------|----------------|
| pound-force per foot (lbf/ft) | newton per meter (N/m) | 1.459 390 E+01 |
| pound-force per inch (lbf/in) | newton per meter (N/m) | 1.751 268 E+02 |

HEAT FLOW RATE

| | | |
|---------------------------------------|----------|----------------|
| calorieth per minute (calth/min) | watt (W) | 6.973 333 E-02 |
| calorieth per second (calth/s) | watt (W) | 4.184 E+00 |
| kilocalorieth per minute (kcalth/min) | watt (W) | 6.973 333 E+01 |
| kilocalorieth per second (kcalth/s) | watt (W) | 4.184 E+03 |

| To convert from | to | Multiply by |
|---|--|----------------|
| LENGTH | | |
| foot (ft) | meter (m) | 3.048 E-01 |
| inch (in) | meter (m) | 2.54 E-02 |
| inch (in) | centimeter (cm) | 2.54 E+00 |
| micron (m) | meter (m) | 1.0 E-06 |
| yard (yd) | meter (m) | 9.144 E-01 |
| MASS and MOMENT OF INERTIA | | |
| kilogram-force second squared per meter (kgf * s ² /m) | kilogram (kg) | 9.806 65 E+00 |
| pound foot squared (lb * ft ²) | kilogram meter squared (kg * m ²) | 4.214 011 E-02 |
| pound inch squared (lb * in ²) | kilogram meter squared (kg * m ²) | 2.926 397 E-04 |
| ton, metric (t) | kilogram (kg) | 1.0 E+03 |
| ton, short (2000 lb) | kilogram (kg) | 9.071 847 E+02 |
| MASS DIVIDED BY AREA | | |
| pound per square foot (lb/ft ²) | kilogram per square meter (kg/m ²) | 4.882 428 E+00 |
| pound per square inch <i>(not pound force) (lb/in²)</i> | kilogram per square meter (kg/m ²) | 7.030 696 E+02 |
| MASS DIVIDED BY LENGTH | | |
| pound per foot (lb/ft) | kilogram per meter (kg/m) | 1.488 164 E+00 |
| pound per inch (lb/in) | kilogram per meter (kg/m) | 1.785 797 E+01 |
| pound per yard (lb/yd) | kilogram per meter (kg/m) | 4.960 546 E-01 |
| PRESSURE or STRESS (FORCE DIVIDED BY AREA) | | |
| kilogram-force per square centimeter (kgf/cm ²) | pascal (Pa) | 9.806 65 E+04 |
| kilogram-force per square meter (kgf/m ²) | pascal (Pa) | 9.806 65 E+00 |
| kilogram-force per square millimeter (kgf/mm ²) | pascal (Pa) | 9.806 65 E+06 |
| kip per square inch (ksi) (kip/in ²) | pascal (Pa) | 6.894 757 E+06 |
| kip per square inch (ksi) (kip/in ²) | kilopascal (kPa) | 6.894 757 E+03 |
| pound-force per square foot (lbf/ft ²) | pascal (Pa) | 4.788 026 E+01 |
| pound-force per square inch (psi) (lbf/in ²) | pascal (Pa) | 6.894 757 E+03 |
| pound-force per square inch (psi) (lbf/in ²) | kilopascal (kPa) | 6.894 757 E+00 |
| psi (pound-force per square inch) (lbf/in ²) | pascal (Pa) | 6.894 757 E+03 |
| psi (pound-force per square inch) (lbf/in ²) | kilopascal (kPa) | 6.894 757 E+00 |

| To convert from | to | Multiply by |
|--|---------------------------------------|--|
| TEMPERATURE | | |
| degree Celsius ($^{\circ}\text{C}$) | kelvin (K) | $T/\text{K} = t/ ^{\circ}\text{C} + 273.15$ |
| degree centigrade | degree Celsius ($^{\circ}\text{C}$) | $t/ ^{\circ}\text{C} \approx t / \text{deg. cent.}$ |
| degree Fahrenheit ($^{\circ}\text{F}$) | degree Celsius ($^{\circ}\text{C}$) | $t/ ^{\circ}\text{C} = (t/ ^{\circ}\text{F} - 32)/1.8$ |
| degree Fahrenheit ($^{\circ}\text{F}$) | kelvin (K) | $T/\text{K} = (t/ ^{\circ}\text{F} + 459.67)/1.8$ |
| kelvin (K) | degree Celsius ($^{\circ}\text{C}$) | $t/ ^{\circ}\text{C} = T/ \text{K} - 273.15$ |
| TEMPERATURE INTERVAL | | |
| degree Celsius ($^{\circ}\text{C}$) | kelvin (K) | 1.0 E+00 |
| degree centigrade | degree Celsius ($^{\circ}\text{C}$) | 1.0 E+00 |
| degree Fahrenheit ($^{\circ}\text{F}$) | degree Celsius ($^{\circ}\text{C}$) | 5.555 556 E-01 |
| degree Fahrenheit ($^{\circ}\text{F}$) | kelvin (K) | 5.555 556 E-01 |
| degree Rankine ($^{\circ}\text{R}$) | kelvin (K) | 5.555 556 E-01 |
| VELOCITY (includes SPEED) | | |
| foot per second (ft/s) | meter per second (m/s) | 3.048 E-01 |
| inch per second (in/s) | meter per second (m/s) | 2.54 E-02 |
| kilometer per hour (km/h) | meter per second (m/s) | 2.777 778 E-01 |
| mile per hour (mi/h) | kilometer per hour (km/h) | 1.609 344 E+00 |
| mile per minute (mi/min) | meter per second (m/s) | 2.682 24 E+01 |
| VOLUME (includes CAPACITY) | | |
| cubic foot (ft^3) | cubic meter (m^3) | 2.831 685 E-02 |
| cubic inch (in^3) | cubic meter (m^3) | 1.638 706 E-05 |
| cubic yard (yd^3) | cubic meter (m^3) | 7.645 549 E-01 |
| gallon (U.S.) (gal) | cubic meter (m^3) | 3.785 412 E-03 |
| gallon (U.S.) (gal) | liter (L) | 3.785 412 E+00 |
| liter (L) | cubic meter (m^3) | 1.0 E-03 |
| ounce (U.S. fluid) (fl oz) | cubic meter (m^3) | 2.957 353 E-05 |
| ounce (U.S. fluid) (fl oz) | milliliter (mL) | 2.957 353 E+01 |